Amendments to the Claims:

Please amend claim 33. Following is a complete listing of the claims pending in the application, as amended:

1-25. (Cancelled)

26. (Previously presented) A method in a computing system for automatically configuring parameters controlling operation of an electrochemical deposition chamber to deposit material on each of a sequence of workpieces to improve conformity with a specified deposition pattern, comprising:

for each of the sequence of workpieces, measuring thicknesses of the workpiece before material is deposited on the workpiece;

for each of the sequence of workpieces, measuring thicknesses of the workpiece after material is deposited on the workpiece;

for each of the sequence of workpieces, configuring the parameters for depositing material on the workpiece based on the specified deposition pattern, the measured thickness of the current workpiece before material is deposited on the current workpiece, the measured thickness of the previous workpiece in the sequence before material is deposited on the previous workpiece, the parameters used for depositing material on the previous workpiece, and the measured thicknesses of the previous workpiece after material is deposited on the previous workpiece.

27. (Original) The method of claim 26 wherein the specified deposition pattern is a flat deposition pattern.

28. (Original) The method of claim 26 wherein the specified deposition pattern is a concave deposition pattern.

29. (Original) The method of claim 26 wherein the specified deposition pattern is a convex deposition pattern.

30. (Original) The method of claim 26 wherein the specified deposition pattern is an arbitrary radial profile.

31. (Original) The method of claim 26 wherein the specified deposition pattern is an arbitrary profile.

32. (Previously presented) The method of claim 26, further comprising, for a second deposition chamber:

retrieving a set of offset values characterizing differences between the electrochemical deposition chamber and the second electrochemical deposition chamber;

modifying the parameters most recently configured for the electrochemical deposition chamber in accordance with the retrieved set of offset values to obtain a parameters for the second electrochemical deposition chamber; and

configuring the second electrochemical deposition chamber with the obtained parameters for the second electrochemical deposition chamber.

33. (Currently Amended) An apparatus for automatically configuring parameters controlling operation of an electrochemical deposition chamber to deposit material on each of a sequence of workpieces to improve conformity with a specified deposition pattern, comprising:

a pre-deposition measuring subsystem that measures thicknesses of each of the sequence of workpieces before material is deposited on the workpiece;

a ~~pre-deposition~~ post-deposition measuring subsystem that measures thicknesses of each of the sequence of workpieces after material is deposited on the workpiece;

a parameter configuration subsystem that configures the parameters for depositing material on each of the sequence of workpieces based on the specified deposition pattern, the measured thickness of the current workpiece before material is deposited on the current workpiece, the measured thickness of the previous workpiece in the sequence before material is deposited on the previous workpiece, the parameters

used for depositing material on the previous workpiece, and the measured thicknesses of the previous workpiece after material is deposited on the previous workpiece.

34-43. (Cancelled)

44. (Previously presented) One or more computer memories collectively containing a data structure for controlling an electrochemical deposition process, comprising a set of parameter values used in the electrochemical deposition process, the parameters having been generated by adjusting an earlier-used set of parameters to resolve differences between measurements of a workpiece deposited using the earlier-used set of parameters and a target deposition profile specified for the electrochemical deposition process,
the contents of the data structure being usable to deposit an additional workpiece in greater conformance with the specified deposition profile.

45. (Previously presented) The computer memories of claim 44 wherein the electrochemical deposition process utilizes a plurality of electrodes, and wherein each parameter value of the set is an amount of current to be delivered through one of the plurality of electrodes.

46. (Original) One or more computer memories collectively containing a deposition chamber offset data structure, comprising a set of values indicating how to adjust a first parameter set used to obtain acceptable deposition results in a first deposition chamber to produce a second parameter set usable to obtain acceptable deposition results in a second deposition chamber.

47-57. (Cancelled)